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(12) NACH DEM VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES
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(19) Weltorganisation für geistiges Eigentum
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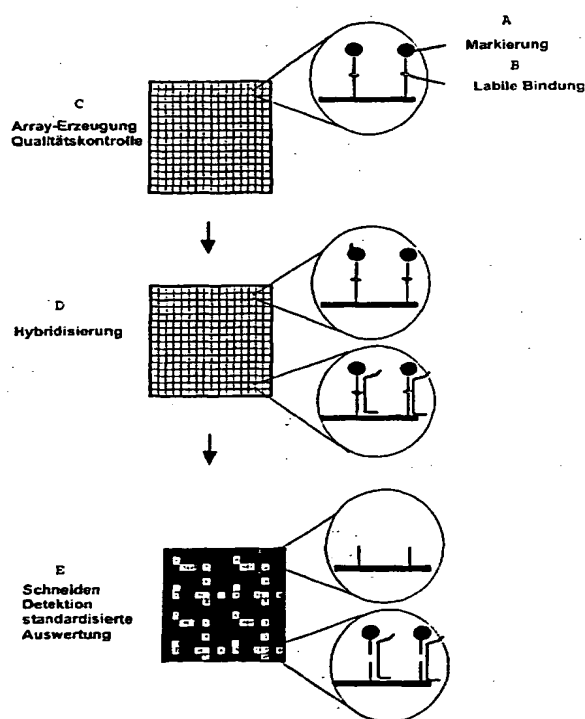
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(81) Bestimmungsstaaten (national): AE, AG, AL, AM, AT,
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GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,

[Fortsetzung auf der nächsten Seite]

(54) Title: INTERACTION DETECTION ON SEVERAL PROBE ARRAYS

(54) Bezeichnung: DETEKTION VON WECHSELWIRKUNGEN AUF SONDEN-ARRAYS



A MARKING
B UNSTABLE BOND
C ARRAY CREATION
QUALITY CONTROL
D HYBRIDIZATION
E CUTTING
DETECTION
STANDARDIZED EVALUATION

(57) Abstract: The invention concerns a method for detecting interactions between probe molecules and target molecules, whereby marking target molecules is not required. The invention further concerns probe arrays and kits suited to such a method, as well as a method for production, quality control and standardization of probe arrays.

(57) Zusammenfassung: Die Erfindung betrifft ein Verfahren zum Nachweis von Wechselwirkungen zwischen Sondenmolekülen und Targetmolekülen auf Sonden-Arrays, bei dem auf die Markierung der Targetmoleküle verzichtet werden kann. Ferner betrifft die Erfindung für ein derartiges Verfahren geeignete Sonden-Arrays und Kits sowie ein Verfahren zur Herstellung, Qualitätsüberwachung und Normierung von Sonden-Arrays.

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KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) **Bestimmungsstaaten (regional):** ARIPO-Patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), eurasisches Patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), europäisches Patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI-Patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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(88) **Veröffentlichungsdatum des internationalen**

Recherchenberichts:

22. Januar 2004

Zur Erklärung der Zweibuchstaben-Codes und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP 02/09780

A. CLASSIFICATION OF SUBJECT MATTER

IPK 7 C12Q1/68 B01J19/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPK 7 C12Q B01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 01533 A (BURSTEIN LAB INC) 15. Januar 1998 (1998-01-15) in der Anmeldung erwähnt Seite 8, Zeile 19 -Seite 9, Zeile 26 Ansprüche 1,9,11,18,34,35,42-44; Abbildungen 2-4,7,11,14; Beispiele 1,2 ---	1-10, 14-28, 31,32, 36-39, 42,50-52
X	US 4 876 187 A (BENDER ROBERT ET AL) 24. Oktober 1989 (1989-10-24) in der Anmeldung erwähnt Spalte 2, Zeile 45,46; Abbildung 1 Spalte 3, Zeile 17-32; Ansprüche 21,23,25,28,47,51; Beispiele 1,2 ---	1-5,7, 10,11, 14,15, 25,36, 38,50

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

4. April 2003

Date of mailing of the international search report

09.07.03

Name and mailing address of the ISA/

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP 02/09780

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 843 655 A (MCGALL GLENN) 1. Dezember 1998 (1998-12-01)	1-9, 14, 15, 21, 22, 24, 26-28, 31, 32 10-13, 29
Y	Spalte 2, Zeile 21-31; Anspruch 1 Spalte 8, Zeile 10-31; Abbildungen 4-6	
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X	US 5 700 642 A (MONFORTE JOSEPH ALBERT ET AL) 23. Dezember 1997 (1997-12-23) Zusammenfassung; Abbildungen 1, 5 Spalte 3, Zeile 56 - Spalte 4, Zeile 38 Spalte 9, Zeile 9, 10; Ansprüche 1, 5, 14, 15 Spalte 24, Zeile 57-64	1-15, 24-29
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A	US 5 552 538 A (HORN THOMAS ET AL) 3. September 1996 (1996-09-03) in der Anmeldung erwähnt Zusammenfassung; Anspruch 1	1-52
A	US 6 156 501 A (MCGALL GLENN HUGH ET AL) 5. Dezember 2000 (2000-12-05) Spalte 8, Zeile 61-64	10-13, 29
A	WO 01 40515 A (MANOHARAN MUTHIAH ; ISIS PHARMACEUTICALS INC (US); SANGHVI YOGESH S) 7. Juni 2001 (2001-06-07) Zusammenfassung; Ansprüche 1, 24, 34	10-13, 29

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 02/09780

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	DE 100 21 204 A (EPIGENOMICS AG) 8. November 2001 (2001-11-08) Zusammenfassung; Abbildung 2 Ansprüche 1, 24, 25 -----	1-4, 6, 7, 9-15

INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP 02/09780

Box I. Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II. Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-52

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

The International Searching Authority has determined that this international application contains multiple (groups of) inventions, namely

1. Claims 1-52

probe array with labeled probe molecules that have a selectively cleavable bond between the immobilization site and the label, production methods and quality control methods for this probe array, detection methods using the probe array as well as kits comprising the probe array.

2. Claims 53-55

methods of synthesis for mercaptonucleosides activated at the 3' end and protected at the 5' end as well as the chemical substance 5'-S-(dimethoxytrityl)-mercapto-5'-deoxynucleoside-3'-O-(2-cyanoethyl,N,N'-diisopropyl-phosphite which can be produced using these methods of synthesis.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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